10/509796 DT04 Rec'd PCT/PTO 29 SEP 2004

SEQUENCE LISTING

<110> BASF Plant Science GmbH

<120> Expression of Phospholipids:Diacylglycerine Acyltransferase (PDAT) for the Production of Plant Storage Lipids with Polyunsaturated Fatty Acids <130> 1 <160> <170> PatentIn version 3.1 <210> <211> 2425 <212> DNA Physcomitrella patens <213> <220> <221> CDS <222> (120)..(2135) Phospholipid:Diacylglycerin-Acyltransferase <223> <400> 1 agaaacagct ctttgtctct ctcgactgat ctaacaatcc ctaatctgtg ttctaaattc 60 ctggacgaga tttgacaaag tccgtatagc ttaacctggt ttaatttcaa gtgacagat 119 atg ccc ctt att cat cgg aaa aag ccg acg gag aaa cca tcg acg ccg 167 Met Pro Leu Ile His Arg Lys Lys Pro Thr Glu Lys Pro Ser Thr Pro 10 cca tct gaa qag gtq gtq cac gat gag gat tcg caa aag aaa cca cac 215 Pro Ser Glu Glu Val Val His Asp Glu Asp Ser Gln Lys Lys Pro His gaa tot too aaa too cac cat aag aaa tog aac gga ggg ggg aag tgg 263 Glu Ser Ser Lys Ser His His Lys Lys Ser Asn Gly Gly Lys Trp tcg tgc atc gat tct tgt tgt tgg ttc att ggg tgt gtg tgt gta acc 311 Ser Cys Ile Asp Ser Cys Cys Trp Phe Ile Gly Cys Val Cys Val Thr 50 55 tgg tgg ttt ctt ctc ttc ctt tac aac gca atg cct gcg agc ttc cct 359 Trp Trp Phe Leu Leu Phe Leu Tyr Asn Ala Met Pro Ala Ser Phe Pro 65 75 80 cag tat gta acg gag cga atc acg ggt cct ttg cct gac ccg ccc ggt 407 Gln Tyr Val Thr Glu Arq Ile Thr Gly Pro Leu Pro Asp Pro Pro Gly 85 95 455

gtt aag ctc aaa aaa gaa ggt ctt aag gcg aaa cat cct gtt gtc ttc Val Lys Leu Lys Lys Glu Gly Leu Lys Ala Lys His Pro Val Val Phe 100 105 . 110

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			_	_	_	tac Tyr		_					_		_	695
	_		_			gca Ala					_				-	743
	-	_	_		_	tgg Trp 215			_		_				_	791
-	_	_			_	cgt Arg	_		_				_	_	-	839
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<210> 2

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<212> PRT

<213> Physcomitrella patens

<400> 2

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Glu Ser Ser Lys Ser His His Lys Lys Ser Asn Gly Gly Lys Trp

40 45

35

Ser Cys Ile Asp Ser Cys Cys Trp Phe Ile Gly Cys Val Cys Val Thr 50 55 Trp Trp Phe Leu Leu Phe Leu Tyr Asn Ala Met Pro Ala Ser Phe Pro 75 Gln Tyr Val Thr Glu Arg Ile Thr Gly Pro Leu Pro Asp Pro Pro Gly 90 Val Lys Leu Lys Lys Glu Gly Leu Lys Ala Lys His Pro Val Val Phe 105 Ile Pro Gly Ile Val Thr Gly Gly Leu Glu Leu Trp Glu Gly Lys Gln 115 120 Cys Ala Asp Gly Leu Phe Arg Lys Arg Leu Trp Gly Gly Thr Phe Gly 135 Glu Val Tyr Lys Arg Pro Leu Cys Trp Val Glu His Met Ser Leu Asp 150 155 Asn Glu Thr Gly Leu Asp Pro Ala Gly Ile Arg Val Arg Ala Val Ser 170 Gly Leu Val Ala Ala Asp Tyr Phe Ala Pro Gly Tyr Phe Val Trp Ala Val Leu Ile Ala Asn Leu Ala His Ile Gly Tyr Glu Glu Lys Asn Met 200. Tyr Met Ala Ala Tyr Asp Trp Arg Leu Ser Phe Gln Asn Thr Glu Val 215 Arg Asp Gln Thr Leu Ser Arg Met Lys Ser Asn Ile Glu Leu Met Val 225 230 Ser Thr Asn Gly Gly Lys Lys Ala Val Ile Val Pro His Ser Met Gly 250 Val Leu Tyr Phe Leu His Phe Met Lys Trp Val Glu Ala Pro Ala Pro 265 Leu Gly Gly Gly Gly Pro Asp Trp Cys Ala Lys Tyr Ile Lys Ala 275 280 285 Val Met Asn Ile Gly Gly Pro Phe Leu Gly Val Pro Lys Ala Val Ala 290 295 Gly Leu Phe Ser Ala Glu Ala Lys Asp Val Ala Val Ala Arg Ala Ile 315 310 Ala Pro Gly Phe Leu Asp Thr Asp Ile Phe Arg Leu Gln Thr Leu Gln

His Val Met Arg Met Thr Arg Thr Trp Asp Ser Thr Met Ser Met Leu 340 345 Pro Lys Gly Gly Asp Thr Ile Trp Gly Gly Leu Asp Trp Ser Pro Glu 360 Lys Gly His Thr Cys Cys Gly Lys Lys Gln Lys Asn Asn Glu Thr Cys 375 Gly Glu Ala Gly Glu Asn Gly Val Ser Lys Lys Ser Pro Val Asn Tyr 385 390 Gly Arg Met Ile Ser Phe Gly Lys Glu Val Ala Glu Ala Ala Pro Ser Glu Ile Asn Asn Ile Asp Phe Arg Gly Ala Val Lys Gly Gln Ser Ile Pro Asn His Thr Cys Arg Asp Val Trp Thr Glu Tyr His Asp Met Gly 435 440 Ile Ala Gly Ile Lys Ala Ile Ala Glu Tyr Lys Val Tyr Thr Ala Gly 455 Glu Ala Ile Asp Leu Leu His Tyr Val Ala Pro Lys Met Met Ala Arg 465 470 475 Gly Ala Ala His Phe Ser Tyr Gly Ile Ala Asp Asp Leu Asp Asp Thr 490 Lys Tyr Gln Asp Pro Lys Tyr Trp Ser Asn Pro Leu Glu Thr Lys Leu 505 Pro Asn Ala Pro Glu Met Glu Ile Tyr Ser Leu Tyr Gly Val Gly Ile 515 Pro Thr Glu Arg Ala Tyr Val Tyr Lys Leu Asn Gln Ser Pro Asp Ser Cys Ile Pro Phe Gln Ile Phe Thr Ser Ala His Glu Glu Asp Glu Asp 545 550 555 Ser Cys Leu Lys Ala Gly Val Tyr Asn Val Asp Gly Asp Glu Thr Val 570 Pro Val Leu Ser Ala Gly Tyr Met Cys Ala Lys Ala Trp Arg Gly Lys 585 Thr Arg Phe Asn Pro Ser Gly Ile Lys Thr Tyr Ile Arg Glu Tyr Asn 595 His Ser Pro Pro Ala Asn Leu Leu Glu Gly Arg Gly Thr Gln Ser Gly 615 Ala His Val Asp Ile Met Gly Asn Phe Ala Leu Ile Glu Asp Ile Met

625 630 635 640

Arg Val Ala Ala Gly Gly Asn Gly Ser Asp Ile Gly His Asp Gln Val $645 \hspace{1cm} 650 \hspace{1cm} 655$

His Ser Gly Ile Phe Glu Trp Ser Glu Arg Ile Asp Leu Lys Leu 660 665 670

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